

UDC 615.214.3.015.45:612.82.015.31:546.41+546.46

USSR

ABSAVA, G. I., Laboratory of Nervous System Pharmacology, Institute of  
Pharmacology, Academy of Medical Sciences USSR, Moscow

"The Effects of CNS Stimulants on the Ca and Mg Content of the Different  
Regions of the Rat Brain"

Moscow, Farmakologiya i Toksikologiya, Vol 36, No 2, 1973, pp 176-179

Abstract: Since it is known that the activity of the CNS stimulants in many cases depends on metal ion concentrations, studies were undertaken to determine the effects of amphetamine (I), pyridrol (II), and caffeine (III) on the concentrations of Ca and Mg ions in the different regions of the rat brain. The experiments were conducted with 180-200 g white male rats. Following an intraperitoneal injection of 2.5 mg/kg of I, 12.5 mg/kg of II, or 25 mg/kg of III, the animals were decapitated 0.5, 1-1.5, and 3-3.5 h later, the brains removed, and Ca and Mg determined by a colorimetric method in the cerebral hemispheres, the brain stem (diencephalon and mesencephalon), and the medulla oblongata. The doses of drugs selected for the experiment are those which elicit maximum motor activity without indications of depression. The control values for Ca in the cerebral hemispheres, the brain stem, and the medulla oblongata were, respectively,  $4.2 \pm 0.06$  mEq/100 g of dry weight,  $3.5 \pm 0.1$  mEq/100 g, and  $3.37 \pm 0.13$  mEq/100 g. The control values for Mg in the corresponding tissues were,

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ABSAVA, G. I., and VYSOTSKAYA, N. G., Farmakologiya i Toksikologiya, Vol 36, No 4, Jul/Aug 73, pp 403-404

diencephalon ( $80.0 \pm 3.6$ ) and the medulla oblongata ( $71.8 \pm 6.8$ ). Phenamine showed no effect on ATP-ase activity in the cortex ( $120.6 \pm 8.1$ ) or medulla oblongata ( $68.4 \pm 5.7$ ), but stimulated activity in the midbrain and diencephalon ( $90.4 \pm 0.5$ ). Pyridrol had the same effects on the microsomal fractions of the cortex ( $87.5 \pm 6.9$ ), medulla oblongata ( $71.2 \pm 6.5$ ) and the midbrain and diencephalon ( $105.6 \pm 7.3$ ) as phenamine. Caffeine inhibited ATP-ase activity in the cortex ( $63.1 \pm 8.4$ ) but did not change it in the medulla oblongata ( $53.7 \pm 7.8$ ) or the midbrain and diencephalon ( $71.2 \pm 6.5$ ).

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USSR

UDC 615.214.31.015.43:612.82.015.14

ABSAVA, G. I., and VYSOTSKAYA, N. B., Group of Biochemical Neuropharmacology in Laboratory of Pharmacology of Nervous System in Institute of Pharmacology, USSR Academy of Medical Sciences

"The Effect of Psychopharmacological Stimulants on the Activity of Potassium and Sodium Ion Stimulated ATP-ase in the Microsomal Fractions of the Rats Brain"

Moscow, Farmakologiya i Toksikologiya, Vol 36, No 4, Jul/Aug 73, pp 403-404

Abstract: The effect of psychostimulants phenamine, pyridrol and caffeine on the activity of K and Na ion stimulated ATP-ase in the microsomes in different parts of the rats brain as indices of the ion-transport system was studied. The psychostimulants phenamine (2.5 mg/kg), pyridrol (12.5 mg/kg) and caffeine (25 mg/kg) were injected intraperitoneally into white rats. During maximum movement excitation (within 1-1 1/2 hours following drug injection) the animals were decapitated, microsomal fractions were isolated by ultracentrifugation and ATP-ase activity was measured. In controls (no injections) K and Na stimulated transport ATP-ase activity (micromoles inorganic P released/mg protein/15 minutes) was highest in the cerebral cortex (112.9±6.8) and about the same in the midbrain and 1/2

USSR

UDC 615.214.3.015:612.81.015.31:546.32]-087.45

ABSAVA, G. I., Laboratory of Pharmacology of the Nervous System (Chief, V. V. Zakusov, Academician of the Academy of Medical Sciences, USSR), Institute of Pharmacology, Academy of Medical Sciences, USSR, Moscow

"The Influence of Psychostimulants Upon Membrane Permeability for  $K^{42}$  in Various Portions of a Rat Brain"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 76, No 8, Aug 73, pp 81-83

Abstract: A study was made of the effect of psychostimulants upon the incorporation of  $K^{42}$  into the tissues of various portions of the brain in rats. Phenamine (2.5 mg/kg) and pyridol (12.5 mg/kg) diminish the permeability of the diencephalon and the mesencephalon for  $K^{42}$ . This effect is absent in the cerebral cortex. Caffeine (25 mg/kg) increased incorporation of the isotope into the tissue of the cerebral hemispheres, with no change in the permeability of the diencephalon and the mesencephalon. Phenamine and caffeine raise the permeability of the medulla oblongata for  $K^{42}$ , while pyridol does not influence the permeability of this section of the brain at all. 1 table. 17 references.

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USSR

GRISHIN, A. D., et al., Teploenergetika, No 3, 1973, pp 43-46

shows that in 1971 iron content of feed water was 10-15  $\mu\text{g/kg}$ , 15-20  $\mu\text{g/kg}$  the previous year, and 20-50  $\mu\text{g/kg}$  during the start-up period in 1969, with high content of 100-150  $\mu\text{g/kg}$  in individual cases. These facts point up the formation of iron oxide deposits as a basic cause of the external corrosion of the screening pipes of the lower radiation section, and emphasize the necessity of water control and chemical cleansing.

UDC 621.181.001.1

USSR  
GRISHIN, A. D., GUTSALO, G. I., SHTAL'MAN, S. G., ABRYUTIN, A. A., DRONOV,  
L. A., SOLOMONOV, V. M., KROL', A. Ya. and BRITVIN, O. V., (all engineers);  
and Candidate of Technical Sciences VIKHREV, Yu. V., ORGRES-VTI-Kostromskaya  
GRES

"Results of a Study of the Combustion and Temperature Regime of the Lower  
Radiation Section of the TGMP-114 Boiler"

Moscow, Teploenergetika, No 3, 1973, pp 43-46

Abstract: Earlier gas-mazut boilers of this general type were not completely  
satisfactory on account of the low reliability of the heating surfaces (mainly  
the lower radiation section) and the great heat flow in the combustion chamber.

This difficulty has been corrected in the new main-series supercritical  
pressure TGMP-114 boiler by reducing the number of boilers (from 8 to 6),  
securing maximal removal of the extreme burners from the side walls, and  
use of recirculation of cold smoke gases into the lower part of the furnace  
chamber.

The direct-flow TGMP-114 boiler has an output of 950 t/hr, with steam parameters  
of 15 kg/cm<sup>2</sup> and 565/570°C. Analysis of operational data on chemical control

2/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136561

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF A CONDITION UNDER WHICH THE INTERACTION OF WAVE FORMING PROCESSES AT THE FLAME SURFACE WITH PERIODIC ACCELERATIONS OF THE MEDIUM CAN PLAY THE ROLE OF THE MAIN FEEDBACK MECHANISM DURING VIBRATIONAL FLAME PROPAGATION IN TUBES. EXPERIMENTS PERFORMED WITH THE VIBRATIONAL PROPAGATION OF CARBON MONOXIDE AIR FLAMES IN SEMIENCLOSED TUBES CONFIRM THE PREDICTED MECHANISM. FACILITY: CHUVASHSKII GOSUDARSIVENNYI UNIVERSITET, CHEBOKSARY, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--CONTRIBUTION TO THE THEORETICAL ANALYSIS OF THE VIBRATIONAL  
PROPAGATION OF FLAMES -U-  
AUTHOR--(02)-CHUCHKALOV, I.A., ABRUKOV, S.A. A  
COUNTRY OF INFO--USSR  
SOURCE--INZHENERNO-FIZICHESKII ZHURNAL, VOL. 18, MAY 1970, P. 924-926  
DATE PUBLISHED-----70  
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TOPIC TAGS--HEAT TUBE, CARBON MONOXIDE, FLAME PROPAGATION  
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CIRC ACCESSION NO--AP0136561  
UNCLASSIFIED



USSR

UDC 629.7.036.3:536.46

ISAYEV, N. A., MAKSIMOV, YU. YA., ABRUKOV, S. A.

"Effect of a Constant Electric Field on a Flame Under Various Conduction Regimes"

V sb. Fiz. vibrats. goreniya i metody yeye issled. (Physics of Vibration Combustion and Methods for Studying It -- Collection of Works), No. 1, Cheboksary, 1971, pp 74-78 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 5, May 72, Abstract No 5.34.27)

Translation: The effect of a strong electrostatic field with a strength up to 4 kv/cm on diffusion and kinetic propane flames under the same fuel flow is discussed. 5 ill., 3 ref. Resume.

USSR

UDC 536.46:533.6

MAKSIMOV, N. N., ABRUKOV, S. A.

"Experimental Test of the Constancy of the Heat Release Rate at the Vibration Propagation Boundary of a Flame"

V sb. Fiz. vibrats. goreniya i metody yeye issled. Vyp. 1 (Physics of Vibration Combustion and Methods for Studying It. No. 1 -- Collection of Works), Cheboksary, 1971, pp 28-33 (from RZh-Mekhanika, No 6, Jun 72, Abstract No 65896)

Translation: The excitation and amplification of sound waves in vibration propagation of a flame was caused by the conversion of a certain portion of the thermal energy released in the flame front into sound energy. The paper uses the vibration propagation of flame in closed narrow tubes filled with CO - air and CO - oxygen mixtures as an example, and experimentally tested the hypothesis that conversion of thermal to acoustical energy is possible only when the total rate of heat release in the flame is not less than some critical value. The data favorably support the assumption of the presence of a minimum value of the heat release determining the boundary of vibration flame propagation. Yu. S. Syzantsev.

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USSR

CHUCHKALOV, I. A. and ABRUKOV, A. M., 11-ya Vses. Konf. po Vopr. Isparenitya, Gorenitya i Gaz. Dinamiki Dispersn. Sistem, 1972

Analysis of results lead to the following conclusions: 1. acoustic instability of the flame provides the conditions necessary to excite vibrations in accordance with Raleigh criterion; 2. the principal feed-back mechanism during the second stage of vibratory flame propagation is the mechanism caused by the acoustic instability of the flame.

USSR

UDC: 536.46:533.6

CHUCHKALOV, I. A. and ABRUKOV, A. M.

"Phase Relationship With Vibratory Propagation of Flame"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972 (11-th All-Union Conference on Problems of Evaporation, Combustion and Gas Dynamics of Dispersion Systems, 1972), 1972, p 64 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No 2B1009)

Translation: Investigation was conducted of the dependence of phase shift between the pressure fluctuation and the cyclic variations of the flame surface area on the magnitude of the process and on the fuel mixture characteristics during the second stage of vibratory flame propagation with wave formation on its surface. High-speed movies were taken (8000 frames per sec) with visualization by Schlieren and Interference Methods. The results obtained show that the phase shift decreases with the increase of magnitude of acoustic oscillations and with the decrease of normal speed of combustion.

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USSR

UDC 621.384.6.01

KUZNETSOV, V. S., ABROYAN, M. A., SOLNYSHKOV, A. I., and FIDEL'SKAYA, R. P.

"Measurement and Investigation of the Redistribution of the Phase Density of Charged Particles in Real Fluxes"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol XLI, No 8, 1971, pp 1611-1617

Abstract: The density distribution of the charged particles of a beam in a four-dimensional phase space of transverse coordinates and velocities determines all the basic characteristics of the flux. The authors' actual measurements of this distribution for proton beams with a current of approximately 400 milliamperes and particle energies of 30 and 650 kiloelectron volts showed that the actual distribution of charged particles differs substantially from the distribution as it is usually calculated theoretically. Most methods of computing the parameters of intensive fluxes assume a microcanonical distribution in which the phase density of the particles does not change from one cross section of the beam to another. In actual fact, the phase density of the particles does change and, consequently, so do such basic characteristics of the flux as the density distribution of the current and the magnitude and configuration of the phase volume.

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USSR

UDC:537.226+537.311.33]:539.16.04

ABROYAN, I. A., TSEKHOVICH, L. A.

"Radiation Conductivity and Formation of Defects in Semiconductors  
During Bombardment by Moderate-Energy Particles"

Tr. Leningr. Politekhn. In-ta [Works of Leningrad Polytechnical Institute], No. 311, 1970, pp. 139-145 (Translated from Referativnyy Zhurnal Fizika, No. 11, 1970, Abstract No. 11 Ye 1087 by A. Shub)

Abstract: The influence of volumetric and surface properties of a semiconductor on the stable radiation conductivity (RC) current is calculated by solving the equation for diffusion of non-equilibrium current carriers. The phenomenon of decreasing RC caused by ion bombardment is explained. It is demonstrated that under some conditions the inverse value of RC current depends linearly on the dose of preliminary ion bombardment, which fact agrees with experimental data. A method is suggested for comparing the effectiveness of destruction of semiconductors by ions of various types and energies.

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USSR

UDC 537.533.2+537.534

ABROYAN, I. A., BELYAKOV, V. S., TITOV, A. I.

"Ion-Electron Emission of Germanium Bombarded by Krypton Ions"

Tr. Leningr. politekhn. in-ta (Works of Leningrad Polytechnical Institute), 1970, No 311, pp 71-76 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12Zh662)

Translation: The ion-electron emission of Ge single crystals under bombardment by krypton ions with energies from 0.3 to 15 kev was studied. It was observed that the coefficient of ion-electron emission  $\gamma$  was a nonlinear function of ion energy. It was established that in the region of emission potentials  $\gamma$  remains constant under a change in the angle of incidence of the ions  $\phi$ . The kinetic knocking out of electrons noted begins krypton ion energies of  $\sim 2$  kev, and the function  $\gamma(\phi)$  is nonmonotonic in accordance with the transparency model of a crystal in the region of kinetic emission. The dependence of  $\gamma$  on target temperature was also investigated. 14 references. Abstract.

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USSR

UDC 669.721.725.018.9

TAYTS, A. Yu., ALEKSANDROVSKIY, S. V., ABROSIMOVA, Ye. N., PETROVA, F. A.,  
KHABAROVA, N. P.

"Study of the Process of Production of Magnesium Alloy, Alloyed With Beryllium"

Tr. Vses. N-i. i Proyechn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 144-149. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G201 by the authors).

Translation: A technology is described for production of a casting alloy in the Mg-Al-Zn-Mn system (type Mg55) with Be added. Due to the addition of Be, the oxidation of the alloy during melting and pouring is sharply reduced, allowing a decrease in the consumption of S and flux, and the losses of alloy with the bottom sediment are also decreased. Due to the poor solubility of Be in Mg, a 2 or 3 times excess quantity must be introduced to the charge. The influence of slight ( $5 \cdot 10^{-4}$ - $15 \cdot 10^{-4}\%$ ) additions of Be on the structure, and mechanical and corrosion properties of the alloys is studied. The introduction of up to 0.008% Be to the Mg alloy does not result in significant enlargement of the grain, the mechanical properties are not reduced, and the corrosion properties are even increased. The production of Mg alloy with addition of Be has been undertaken on the commercial scale. 3 figs; 1 table; 5 biblio refs.

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USSR

UDC 621.382.2

TOLOMASOV, V.A., ABRCIMOVA, I.N., SERGIYEVSKAYA, T.N.

"Study Of Four-Layer Epitaxial High-Voltage Silicon Of  $p^+-n-p-n^+$  Structure (Short Communication)"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 4(61), pp. 66-67 (from RZh: Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B224)

Translation: Epitaxial structure of the  $p^+-n-p-n^+$  type were prepared by sublimation of Si in a vacuum. Disks of Si doped with phosphorus were used as substrates, performing the role of a n-type base. The p-type bases were prepared from a source of Si doped with boron, and the  $p^+-n^+$  emitters from Si doped with boron and phosphorus respectively. The current-voltage characteristics of the structure has a section with negative resistance. The reverse voltage of the structure is 2000--2400 V, and the switching voltage is 1200--1500 V. The large residual voltage (2--5 V) is explained by the high resistance of the applicable contacts and n-base. 2 ref. 1 tab. N.K.

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Acc. Nr:

AP0037020

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskiy Zhurnal SSSR, 1970, Vol 56,  
Nr 2, pp 204 - 210

STUDIES ON INITIAL PERIODS OF MUSCULAR ACTIVITY IN TRAINED SUBJECTS

Mikhaylov, V. V.; Abrosimov, V. V.; Voznyak, S. V.;  
Semashko, S. G.; Sergiyenko, V. B.

Dept. of Physiology, State Central Institute of Physical Culture, and the Lab.  
of Biomechanics, the National Res. Institute of Physical Culture, Moscow

Increased energy cost of initial stage and during submaximal work performed by sportsmen on a bicycle ergometer right after less intensive work, is discovered as compared with energy expenditures under a steady state condition.

Values of the electric activity of 12 muscles of legs, arms and body, of the efforts applied to turn the pedals and shown by dynamogram, and of oxygen demand during various periods of work, are compared.

Increased energy expenditures during initial work periods are regarded from the viewpoint of a possible role of anaerobic reactions prevailing over aerobic those, spreading of excitation over the C. N. S. and energy expenditure overcoming inertia of the mechanical system.

D.N.

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REEL/FRA  
19721956

USSR

UDC 612.741

MIKHAYLOV, V. V., MARTYNOV, G. M., ~~ABROSIMOV, V. V.~~, and SERGIYENKO, V. B.,  
Department of Physiology, State Central Institute of Physical Culture, and  
Biomechanics Sector, All-Union Scientific Research Institute of Physical  
Culture, Moscow

"Effect of Switching Levels of Functioning of Muscles During Rhythmic Work"

Leningrad, Fiziologicheskiy Zhurnal SSSR, No 8, 1971, pp 1,128-1,133

Abstract: The value of changing levels of muscular activity was studied in 18 athletes during 10 minutes of work on an ergometer bicycle involving two different methods of pedaling (downward and circular) differing in amount of effort involved, rhythmic structure, and distribution of exertions. Analysis of the oxygen demand and tracings of electromyograms of 12 muscles revealed the downward technique to be more efficient than the circular in terms of the energy expended. However, alternating the two methods proved to be more efficient than when either was used alone. Switching levels of functioning of muscles improves the blood flow and thereby prevents the formation of foci of local fatigue.

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ISSN: 016-7337; 375.001

\_\_\_\_\_ a citizen of \_\_\_\_\_ State of \_\_\_\_\_  
do hereby certify that \_\_\_\_\_  
\_\_\_\_\_ was \_\_\_\_\_  
\_\_\_\_\_ on \_\_\_\_\_  
\_\_\_\_\_ of \_\_\_\_\_  
\_\_\_\_\_ No. 9, 1974, entitled \_\_\_\_\_  
\_\_\_\_\_ (S. 95-67).

*Development has undergone a specific stage of formation in the system of medical education, more fully, a stage of initial development, activating the nature of a pedagogical influence. This is typical not only for our country, but also for the practice of this journal's foreign counterparts. In order to do with the "illiterate child" while there is a moment, in principle, that a Soviet physician must be informed about development and that its place in the system of medical education must be "explicated," which is also our view, there are special differences between the participants of the discussions which deal with who would do this best and in what pedagogic forms.*

In the opinion of Professor A.B. Petrov, it would be poisonous to have the course on demology organically attached to the chair of history of medicine. We believe that such an approach would lead to consideration of demology only in the historical aspect, without sufficient theoretical and philosophical substantiation. This could be reduced to demonstration of a brilliant pattern of coexistence of scientists and, to a lesser extent, to disfigurement of the moral content of science itself. What is beneficial in the behavior of coded phobias, "great and small," could overshadow the objective basis of their criminal duty.

At present, the Mr. Farnham and I, however, believe that dentology must be founded on the chair of social hygiene and public health organization. But this would have its own laws, and the spectrum of its medical aspects is limited. So that it could hardly be in a position to solve, by itself, the problem of teaching dentology in the diverse branches of medicine. There are professional distinctions in surgery, internal medicine, obstetrics. Syncretically, forensic medicine, and others, so that it would be hardly put. Possibly to provide information about dentology on the chair of social hygiene and public health organization.

Published for the purpose of dissemination.

✓ 11/15 5/135/

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## Pharmacology and Toxicology

LITER

1976.12.10.7.40.97: 1-10.10.97

AGRESIMOV, N. M., Chair of Hospital Therapy, Institute of Medicine, Moscow, USSR.  
 "Changes in the homeostatic equilibrium in patients with acute poisoning."  
 Moscow, Terapevticheskii Arkhiv, No 1, 1976, pp. 1-10.

In recent years changes take place in the clinical picture of acute poisoning and blood electrolytes of patients suffering from acute poisoning (chloroform) poisoning. In an illustrative case of acute poisoning with chloroform arterial blood gases of a 16-year-old girl showed a marked increase in a critical condition 6 hours after poisoning. Arterial blood gases revealed hypoxemia and metabolic acidosis, with a pH of 7.20,  $pCO_2$  80 mm Hg, and alkalemia. Administration of sodium bicarbonate, 5% glucose solution, and hypertonic sodium chloride solution (10%) resulted in temporary improvement. Convulsive twitching of the face and limbs occurred on the fourth day. The patient became unconscious on the fifth day, recovered briefly after receiving infusions of glucose and other agents, oxygen, etc. Motor excitation was again observed. Analysis of arterial blood gases showed that the patient had developed respiratory acidosis, pH 7.20,  $pCO_2$  80 mm Hg.

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USSR

ABROSIMOV, N. K., et al, USSR Author's Certificate No 270131,  
filed 28 Apr 69, published 5 Aug 70

its end opposed to the accelerating slit. In a variation of the proposed device, with the object of obtaining a relatively steady transmission of voltage from the anode of the oscillator tube to the accelerating slit of the dee, a lumped capacitance is connected to the anode of the oscillator tube, and the length and wave resistance of the feedback feeders are respectively matched.

2/2

UDC 621.384.6

USSR

~~ABROSEIMOV, N.K.~~, DMITRIYEV, S.P., KULIKOV, A.V., MIKHEYEV, G.F., SEREDENKO, YE. V., CHERNOV, N.N. [Fiz.-tekhn. in-t AN SSSR -- Physicotechnical Institute, AS USSR]

"Device For Coupling An Oscillator Tube With The Resonance System Of A Synchrocyclotron"

USSR Author's Certificate No 270131, filed 28 Apr 69, published 5 Aug 70 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A403P)

Translation: A device is proposed for coupling an oscillator tube with the resonance system of a synchrocyclotron, which contains a waveguide feeder line. With the object of increasing the reliability of excitation of the resonance system and suppressing the transverse oscillations at the dee, the feeder for direct coupling is fulfilled in the form of two branches connecting the tube anode with the right and left halves of the dee, symmetrically with respect to the longitudinal axis of the dee, and the voltage feedback to the tube cathode is fed across a branching feedback feeder with the inductive voltage divider also arranged symmetrically with respect to the longitudinal axis of the dee at

USSR

UDC: 621.384.639

ABROSIMOV, N. K., ALKHAZOV, D. G., DMITRIYEV, S. P., YELISEYEV, V. A.,  
KAMINKER, D. M., KULIKOV, A. V., MIRONOV, Yu. T., MIKHEYEV, G. F.,  
RYABOV, G. A., CHERNOV, N. N., SHALMANOV, V. I., KOMAR, Ye. G., MALY-  
SHEV, I. F., MONOSZON, I. A., PEREGUD, V. I., ROZHDESTVENSKIY, B. V.,  
ROYFE, I. M., SEREDENKO, Ye. V., Physicotechnical Institute imeni A. F.  
Ioffe, Academy of Sciences of the USSR, Leningrad, Scientific Research  
Institute of Electrophysical Equipment imeni D. V. Yefremov, Leningrad

"The Leningrad Synchrocyclotron for a Proton Energy of 1 GeV"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, No 9, Sep 71, pp 1769-1775

Abstract: The paper describes the synchrocyclotron at the Physicotechnical Institute imeni A. F. Ioffe of the Academy of Sciences of the USSR for a proton energy of 1 GeV. Proton beam parameters as well as the characteristics of the main systems of the accelerator are presented. The beam channels are described, and the layout of the accelerator building is given. The installation has been in successful operation since 1970. Three tables, two figures, bibliography of twelve titles.

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ABELSIMOV, N. K.

Nuclear physics

JAN 25 1964  
10 Jan 63  
(2)THE SYNCHROCYCLOTRON OF THE LEININAD INSTITUTE  
OF NUCLEAR PHYSICS

UDC: 599.1

[Article by N. A. ABELSIMOV and A. A. KOROTKOV, Institute of Nuclear Physics, Leninad, Vol. 1, No. 11, November 1962, pp. 42-51]

The arsenal of research resources of Soviet physics is constantly expanding. One of the latest major novelties is a 1-GeV proton synchrocyclotron which recently went into operation at the Leninad Institute of Nuclear Physics (Inst. B. P. Konstantinov of the AS USSR). Now that accelerator (Figure 1), equipped with a computer control based on the MIN-2 computer, is being successfully operated.

**Design.** The synchrocyclotron has the limiting energy of accelerated protons for that type of accelerator (1 GeV) and high efficiency of the system for extraction of the beam from the accelerator chamber (25%), which permitted obtaining an external proton beam with an intensity of  $10^{12}$  protons per second at a small emittance and a relatively small current of the internal beam; this is extremely important from the point of view of radiation safety during operation. In the accelerator a half-wave resonance system is used, with a rotary frequency variator which for design considerations is divided into two independent sections, connected by a common shaft and connected directly to a dee. The necessary overlapping in frequency of the accelerating voltage, equal to 2.3, is achieved by suitable variation of the distribution of the wave resistance along the longitudinal axis of the dee and also by the design and method of connection of the frequency variator (Figure 2). Additional inductances and stator packets are used to increase the coefficient of overlapping of the capacitance of the frequency variator.

\*The Institute of Experimental Physics (Inst. D. V. Efremov participated in its development and start-up.

SPRS 59208

6-73

4

## X-13. CONCENTRATION PROFILES IN AUTOEPITAXIAL LAYERS OF SILICON

Article by V. A. Tolstov, T. N. Sergeevskaya, L. N. Abramova, I. A. Zerkov, G. M. Novikova, I. I. Simonov, Po Prosvetam Russk. Akad. Nauk, Sovetsk. Akad. Nauk, 12-17 June 1972, p. 1111.

1. The volt-ampere method and the method of interdiffusion were used to study the concentration distribution of charge carriers in autoepitaxial layers of silicon of p and n-type conductivity grown by pyrolysis of hydrides and by sublimation in a vacuum on substrates alloyed with B, P and Sb to a concentration of  $\sim 10^{19} \text{ cm}^{-3}$ .
2. The width of the concentration p-n<sup>+</sup> and n-n<sup>+</sup> junctions obtained at temperatures of 700-1000°C in a vacuum and 1100°C by pyrolysis of hydrides does not exceed 0.2 microns and can be caused by diffusion of the admixture from the substrate.
3. In the concentration curves from autoepitaxial layers of silicon grown at 1000-1100°C on substrates alloyed with phosphorus, tails up to one micron long are observed which are unexplainable by phosphorus diffusion from the substrate.
4. The nature of the observed profiles can be explained by the peculiarities of the hybrid and vacuum technology of obtaining autoepitaxial silicon layers.

AB ROSIMOVA, L. N.

USSR

MIKHAYLOV, V. V., et al., Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 9, 1972, pp 1,397-1,402

of work periods which were standard with respect to capacity and duration and also the vegetative and biometric indexes. During the fatigue period, the oxygen demand was 104-176% higher than otherwise. The phenomena of using additional muscles in the presence of fatigue not functioning previously and also discoordination of the functions were not detected in the study. An increase in work value in the case of fatigue was caused by recruiting additional motor units of the primary working muscles and also activation of glycolysis with low energy efficiency.

2/2

USSR

UDC 612.744.2:612.745

MIKHAYLOV, V. V., YERDAKOV, S. V., ABROSINOV, V. V., SERGIYENKO, V. B.,  
Physiology Department, State Central Institute of Physical Culture, and  
Biomechanics Sector, All-Union Scientific Research Institute of Physical  
Culture, Moscow

"Energy Value of Muscular Work Under Fatigue Conditions"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 56,  
No 9, 1972, pp 1,397-1,402

Abstract: Hypotheses regarding the mechanism of increase in the energy value of work are based on the fact that additional muscles are summoned in fatigue situations, changes in the physical properties of the muscles, and discoordination of functions. Considering the possibility of fatigue by glycolysis of respiration during muscular work and the reduction in oxygen consumption in the case of acute fatigue, a role of activation of glycolysis with low energy effect and simultaneous suppression of the highly efficient oxidative phosphorylation in the mechanism of increased expenditures during fatigue is proposed. A study was made to check the hypotheses.

Experienced bicyclists doing a variable amount of work of submaximal capacity on a bicycle ergometer were tested to determine the oxygen need

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USSR

ABROSIMOV, I. L., et al, Izmeritel'naya Tekhnika, No. 7, 1970, pp 42-46

as the IIN-3M, the instrument measures the instantaneous values of pulses ranging in duration from 0.1 to 10,000  $\mu$ s and in amplitude from 0.1 to 100 volts.

USSR

UDC: 681.7.021.517.325

ABROSIKOV, I. L., KRYNIN, N. M., NEUSTROYEV, L. S., and SHURABKO, L. V.

"Device for Measuring Instantaneous Values of Pulse Voltages"

Moscow, Izmeritel'naya Tekhnika, No. 7, 1970, pp 43-50

Abstract: The instrument was developed by the VNIITRI /expansion unknown/ and uses the compensation method with an electron-beam null indicator. It is highly accurate for pulse voltages of microsecond and nanosecond duration. The null indicator consists of an oscillograph tube, the screen of which has an opening at the center instead of a luminescent screen, and an electron multiplier behind the screen. The opening is on the electrical axis of the electron gun. The signal to be measured and a compensating signal of opposite polarity are applied to the vertically deflecting plates of the indicator, with a sawtoothed voltage applied to the horizontally deflecting plates. The path sketched by the beam is thus the difference between the measured and compensating signals as a function of time. When the difference is close to zero, the electrons are directed through the opening to the first dynode of the multiplier. When the beam center coincides with the opening, the pulse at the output of the unit is a maximum; with a deviation of the beam away from the opening, the output amplitude is reduced. known  
1/2

2/2 049

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118495

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE SPECTRAL COMPOSITION OF THE SUPERRADIATION ON THREE LINES OF A PULSED NEON LASER WITH WAVELENGTHS OF 6143, 5944, AND 5401 A WITH THE AID OF A FABRY-PEROT INTERFEROMETER WITH A THICKNESS OF 10 AND 15 CM. THE SUPERRADIATION LINES ARE OBSERVED TO POSSESS A FINE STRUCTURE WHICH IN TYPICAL CASES CONTAINS FROM THREE TO SIX COMPONENTS WITH AN INTERVAL RANGING FROM 150 TO 400 HMZ BETWEEN NEIGHBORING COMPONENTS. THE WIDTH OF AN INDIVIDUAL COMPONENT RANGES FROM ABOUT 100 TO 200 MHZ, WHICH AGREES IN ORDER OF MAGNITUDE WITH THE SUPERRADIATION PULSE LENGTH (ABOUT 5 TO 8 NSEC). NO DEPENDENCE OF THE SPLITTING INTERVAL ON THE GEOMETRY OF THE DISCHARGE REGION, THE GAS PRESSURE, AND THE SIZE OF THE CHARGE CAPACITANCE IS FOUND. THE OBSERVED FINE STRUCTURE CANNOT BE ATTRIBUTED TO THE ISOTOPIC STRUCTURE OF NEON, SINCE THE NUMBER OF COMPONENTS AND THE DISTANCES BETWEEN THEM DO NOT CORRESPOND TO THE CHARACTERISTICS OF THE ISOTOPIC SHIFT IN NEON. IT IS SUGGESTED THAT THE COMPONENTS OF THE FINE STRUCTURE MAY BELONG TO SUPERRADIATIVE MODES OF THE PULSED LASER.

UNCLASSIFIED

1/2 049 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--FINE STRUCTURE OF THE SUPERRADIATION SPECTRUM IN A PULSED NEON  
LASER -U-  
AUTHOR-(04)-KOROLEV, F.A., ABROSIMOV, G.V., ODINTSOV, A.I., YAKUNIN, V.P.  
COUNTRY OF INFO--USSR  
SOURCE--OPTIKA I SPEKTROSKOPIIA, VOL. 28, MAR. 1970, P. 540-542  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PHYSICS  
  
TOPIC TAGS--FINE STRUCTURE, NEON, LASER PULSE, GAS LASER, LASER RADIATION  
SPECTRUM, FABRY PEROT INTERFEROMETER, LINE SPLITTING, LASER PULSE LENGTH  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1996/1508 STEP NO--UR/0051/70/028/000/0540/0542  
  
CIRC ACCESSION NO--AP0118495  
UNCLASSIFIED



USSR

UDC: 621.317.7.089.68

ABROSIMOV, E. A., LAZAREVA, N. A., MALOSHENKO, O. Ya., SMILDT, V. I.

"A Precision High-Frequency Fixed Capacitor"

✓ Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 11-16 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A362)

Translation: It is noted that standard capacitors must be developed for use with special circuits so that standard inductors and resistors can also be made. A high-frequency reference capacitor based on a coaxial design made at the Siberian Scientific Research Institute of Metrology is described. Its electrical parameters are given. One illustration, bibliography of eight titles. N. S.

1/1

- 47 -

USSR

UDC 517.945.7

MIKHAYLOV, L. G., Corresponding Member Academy of Sciences Tadzhik SSR and  
ABROSIMOV, A. V., Gorkiy State University, imeni N. I. Lobachevskiy

"Several Overdetermined Systems of Partial Differential Equations"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, Vol 14, No 6, 1971, pp 9-13

Abstract: The authors pose the problem of an open bounded set of points for a plane whose boundary is a finite number of rectifiable closed Jordan curves. In addition, they examine a variety of solutions to several systems such as that described by this problem.

They pose 4 theorems to ensure compatibility of two equations whose symbols represent analytical functions of their own variables. The authors discuss these theorems and 2 lemmas and give a detailed mathematical analysis of their positions along with the proof thereto. The article contains 3 bibliographic entries.

1/1

USSR

UDC: 669.162.12:622.782.004.12

OSTROUKHOV, M. Ya., RUSKOVA, A. G., PERMINOV, N. I., RUSAKOV, L. N., VYATKIN, G. P.,  
and ABROSIMOV, A. S.

"Structural Specifics and Metallurgical Properties of Pellets Made of Titanium-Magnetite Ore Concentrates. Report 1"

Izv. VUZ, Chernaya Metallurgiya, No 6, 1970, pp 33-37

Abstract: Pellets made of ilmenite-titano-magnetite ores from the southern Urals (60.87% Fe; 10.14%  $TiO_2$ ) with basicity ( $CaO: SiO_2$ ) 0.40-1.38, roasted under isothermal conditions in a current of air (60 l/hr) for 30 minutes were studied. The composition and structure of the pellets were determined by the roasting temperature. With low-temperature roasting (1150-1220° C), the processes of sintering and recrystallization occur in parallel with oxidation of the ore grains, and highly porous, but low-strength pellets are produced consisting of hematite, pseudobrookite, calcium ferrites (influxed pellets) and silicate glass. With high-temperature roasting (1250-1300° C), oxidation precedes the recrystallization and sintering processes of the titano magnetite. These pellets have increased strength but low porosity, and consist of hematite (solid solution) and silicate binder; the predominate mass of the titanium oxides is present as a solid solution consisting of hematite. Two illustrations; one table; three biblio. refs.

1/1

USSR

UDC: 62-55

KOLESNIKOV, K. D., et al, USSR Author's Certificate No. 289397

in the first pass through the extremum, the time taken by the system to move from the extremum point to the reverse point is remembered while the search through the remembered time interval is switched out with the movement of the system in the reverse direction. The sign of the input quantity for the inertialess object having a symmetrical extremal characteristic is formed by the extremum recollection method; motion in the system stops at the moment the extremum point is passed, after the second reverse, in the system's return to the extremum. The choice of reverse zone guarantees the system the required noise immunity, and the switch-out at the extremum point provides for high search accuracy. Resume

2/2

- 32 -

USSR

UDJ: 62-55

KOLESNIKOV, K. D., ABROSIMOV, A. A., and KARAKOZOV, B. M. /Kuybyshev Polytechnical Institute/

"Method of Searching for Extremum of Inertialess Objects"

USSR Author's Certificate No 289397, filed 12 July 68, published 2 Feb 71 (from RZh-Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1971, Abstract No. 12A154P)

Translation: The invention deals with means of automatic control, especially with extremal control systems (ECS). It may be used when high accuracy is required to find the extremum in the presence of noise at the object output where the object is inertialess and has a symmetrical extremal characteristic. The known method of finding the extremum of inertialess objects with symmetrical extremum characteristics is realized with constant search velocity which is the reverse of the remembered extremum and with the search system switched out as the extremum is approached. The defect of this method is the low search accuracy, caused by the necessary distance from the extremum to the reverse zone magnitude. It should be noted that the greater the reverse zone, the better the relation between the useful signal and the noise: i.e., the greater the error in the extremum search, the higher the noise immunity. The proposed method differs from the known method in that the reverse zone is chosen from the signal/noise ratio condition;

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2/2 014

UNCLASSIFIED

PROCESSING DATE--04DEC77

CIRC ACCESSION NO--AP0140797

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPIN D. DISTRIBUTION WAS CALCD. FOR A NO. OF CYCLIC AND ACYCLIC ALIPHATIC RADICALS: ET, CYCLOHEXYL, PIPERIDINOXY, AND BU BY A SIMPLE APPROXN. METHOD OF MO LCAO FOR SIGMA SYSTEMS. THE RADICAL CENTER IN CYCLOHEXYL RADICAL WAS CONFIRMED TO HAVE A PI ELECTRON STRUCTURE. THE AV. VALUES OF THE HYPERFINE INTERACTION CONSTS. ARE INDEPENDENT OF THE INVERSION OF THE CYCLE IN THE CYCLIC RADICALS STUDIED. THE ONE ELECTRON MECHANISM CALCNS. ARE IN AGREEMENT WITH THE OBSD. BASIC PROPERTIES OF THE SPIN D. I.E. THE ANGULAR DEPENDENCE OF THE HYPERFINE INTERACTION CONST., ITS MIN. ON THE GAMMA PROTONS IN THE CYCLIC SYSTEMS, AND MARELY LARGE VALUES OF THESE CONSTS. FOR REMOTE PROTONS IN THE SATD. SP PRIME3 SYSTEMS. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--THEORETICAL INTERPRETATION OF SPIN DENSITY DISTRIBUTION IN SOME  
ALKYL RADICALS -U-  
AUTHOR-(03)-ABRONIN, I.A., ZHIDOMIROV, G.M., BUCHACHENKO, A.L.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. STRUKT. KHIM. 1970, 11(2), 229-34  
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYL RADICAL, MOLECULAR ORBITAL, ELECTRON STRUCTURE, PROTON,  
MOLECULAR INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605018/B10 STEP NO--UR/0192/70/011/002/0229/0234

CIRC ACCESSION NO--AP0140797  
UNCLASSIFIED

Acc. Nr. **AP0054338** Abstracting Service:  
CHEMICAL ABST. 6/70

Ref. Code:

UR 0033

116783y Superadditivity of developing and activating action on black and white films of 3-aminopyrazoline derivatives. Abritalin, V. L.; Zhurin, R. B.; Trukanaitis, A.; Ivina, V. N.; Shchul'gina, O. E. (Vses. Nauch.-Issled. Inst. Khim.-Fotogr. Prom., Moscow, USSR). *Zh. Nauch. Prikl. Fotogr. Kinematogr.* 1970, 15(1), 26-30 (Russ). The most common black-and-white developers and high-sensitivity isopanchromatic film were used. 1-(4-Aminophenyl)-3-aminopyrazoline (I) in several black-and-white developers revealed no superadditive action with Metol, Amidol, Phenidone, methylphenidone and 1-(*m*-tolyl)-3-pyrazolidinone, but with hydroquinone, Glycin, Adurol, and pyrogallol a marked superadditivity effect was obsd. Introduction of electroneg. sulfo- and aceto-groups into the mol. of 3-aminopyrazoline resulted in a sharp decrease in superadditivity. I exerted higher activating effect on hydroquinones. Electropos. groups introduced into the Ph group of 3-aminopyrazoline promoted the activating action.

F. Vesely

REEL/FRAME  
19831482



2/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70  
CIRC ACCESSION NO--AP0135125  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. I. V. PETRYANOV, ET AL. FILTERS  
(1968), USED FOR REMOVING AEROSOLS FROM GASES, ARE RECOMMENDED FOR  
PURIFICATION OF LIQ. HE FROM HIGHLY DISPERSED SUSPENDED MATTER. THESE  
FILTERS SHOULD BE LOCATED AT THE EXIT OF ABSORPTION TRAPS IN THE LOW  
TEMP. ZONE. FACILITY: FIZ. FAD., MOSK. GOS. UNIV., MOSCOW,  
USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--PURITY OF LIQUID HELIUM -U-  
AUTHOR-(02)-ABRIKOSOVA, I.I., SHALNIKOV, A.I. A  
COUNTRY OF INFO--USSR  
SOURCE--PRIB. TEKH. EKSP. 1970, (2), 242-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--AEROSOL, CHEMICAL PURIFICATION, FILTRATION, HELIUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3006/1454 STEP NO--UR/0120/70/000/002/0242/0243  
CIRC ACCESSION NO--AP0135125  
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133464

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALLOYS OF THE GERMANIUM TELLURIUM COPPER TERNARY SYSTEM WERE STUDIED ALONG THE GE SUB0.97 TE, CU SUB2 TE PROFILE. THIS IS A QUASIBINARY PROFILE OF THE EUTECTIC TYPE WITH LIMITED REGIONS OF SOLID SOLUTIONS. THE AUTHORS ANALYZED THE MECHANISM OF THE FORMATION OF SOLID SOLUTIONS BASED ON GERMANIUM TELLURIDE AND SHOWED THAT WITH SOLUTION OF CU SUB2 TE, A PORTION OF COPPER ATOMS DISSOLVES IN THE VACANCIES, LOWERING THE CONCENTRATION OF THE POSITIVE CHARGE CARRIERS. ANOTHER PORTION REPLACES GERMANIUM, UTILIZING THEIR VALENCE ELECTRONS IN BONDING TO THE TELLURIUM ATOM INTRODUCED CONCURRENTLY. SUCH A MECHANISM OF FORMATION OF SOLID SOLUTIONS IS CHARACTERISTIC OF NONSTOICHIOMETRIC SEMICONDUCTIVE COMPOUNDS WITH VACANCIES. GERMANIUM TELLURIDE APPEARS TO BE ONE SUCH COMPOUND. FACILITY: INSTITUTE OF METALLURGY IMENI A. A. BAYKOV, ACADEMY OF SCIENCES USSR.

UNCLASSIFIED

1/2 028

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--INVESTIGATION OF THE GETE,CU SUB2 TE SYSTEM --U-

AUTHOR-(04)-ABRIKOSOV, N.KH., BANKINA, V.F., LEV, YE.YA., SYSOYEVA, L.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. SSSR. MOSCOW, NEORGANICHESKIYE MATERIALY, VOL 6, NO 5, MAY 70, PP 864-867

DATE PUBLISHED----MAY70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--GERMANIUM ALLOY, TELLURIUM ALLOY, COPPER ALLOY, TELLURIDE, SOLID SOLUTION, SEMICONDUCTOR MATERIAL, INTERMETALLIC COMPOUND, METALLURGIC RESEARCH FACILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3005/1540

STEP NO--UR/0363/70/006/005/0864/0867

CIRC ACCESSION NO--AP0133464

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138197

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METHODS AND APP. WERE DEVELOPED FOR MEASUREMENT OF THE ELEC. CONDS. AND THERMOEMFS. OF HIGHLY VOLATILE MELTS. THE NEW VESSELS ARE MADE OF MO GLASS WITH SEALED MO ELECTRODES FOR MEASUREMENTS AT LOW TEMPS., AND OF FUSED QUARTZ WITH SEALED W ELECTRODES FOR HIGH TEMPS. FACILITY: INST. MET. IM. BAIKOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--MEASUREMENT OF THE ELECTRICAL CONDUCTIVITY AND THERMOEMFS. OF MELTS  
OF HIGHLY VOLATILE SUBSTANCES -U-  
AUTHOR-(03)-ABRIKOSOV, N.KH., CHIZHEVSKAYA, S.N., KURBATOV, V.P.  
COUNTRY OF INFO--USSR *A*  
SOURCE--ZAVOD. LAB. 1970, 36(4), 449-50  
DATE PUBLISHED-----70

SUBJECT AREAS--METHODS AND EQUIPMENT, MATERIALS

TOPIC TAGS--ELECTRIC CONDUCTIVITY MEASUREMENT, THERMAL EMF, MOLYBDENUM  
GLASS, ELECTRODE DESIGN, VAPOR PRESSURE, HIGH TEMPERATURE INSTRUMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/1182

STEP NO--UR/0032/70/036/004/0449/0450

CIRC ACCESSION NO--AP0138197

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118011

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMAL, MICROSTRUCTURAL, X RAY PHASE, AND MICROHARDNESS MEASUREMENTS WERE USED TO STUDY THE PHASE DIAGRAM OF THAT PART OF THE TERNARY GE-SB SYSTEM BOUNDED BY THE BINARY GE-SB SYSTEM AND THE QUASIBINARY SB SUB2 TE SUB3-GE-TE SECTION. THE POLYTHERMAL SECTIONS SB SUB2 TE SUB3-GE AND BETA SUB31 ATOMPERCENTTE-GE WERE CONSTRUCTED. THE REGION OF THE SOLID SOLNS. BASED ON THE BETA PHASE ALONG THE BETA SUB31 ATOMPERCENTTE-GE SECTION AMOUNTS TO 10 ATOMPERCENT GE AND THE REGION OF THE SOLID SOLN. ALONG THE SB SUB2 TE SUB3-GE SECTION BASED ON SB SUB2 TE SUB3 AMOUNTS TO 15 ATOMPERCENTGE. THE LIQUIDUS SURFACE OF PART OF THE SB-GE-TE TERNARY SYSTEM WAS CONSTRUCTED. THE LARGEST REGION IS OCCUPIED BY THE PRIMARY CRYSTN. FIELD OF GE, WHICH IS CONTIGUOUS TO ALL OF THE REMAINING PRIMARY RECRYSTN. FIELDS OF THE PHASES PRESENT. THE REACTIONS TAKING PLACE DURING THE CRYSTN. OF THE ALLOYS IN THE INVESTIGATED PART OF THE SYSTEM WERE DETD. FACILITY: INST. MET. IM. BAIKOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--GERMANIUM ANTIMONY TELLURIUM TERNARY SYSTEM -U-  
AUTHOR--(02)-ABRIKOSOV, N.KH., DANILOVADOBRYAKOVA, G.T.  
COUNTRY OF INFO--USSR *A*  
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 475-81  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
  
TOPIC TAGS--GERMANIUM ALLOY, ANTIMONY ALLOY, TELLURIUM ALLOY,  
MICROHARDNESS, PHASE DIAGRAM  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/0835 STEP NO--UR/0363/70/006/003/0475/0481  
CIRC ACCESSION NO--AP0118011  
UNCLASSIFIED



Rare Metals

USSR

UDC 546.664'24:621.317.412

PECHENNIKOV, A. V., KUPRIYANOV, B. A., CHECHERNIKOV, V. I., ABRIKOSOV, N. KH.,  
and ZINCHENKO, K. A., Moscow State University ineni N. V. Lomonosov, Institute  
of Metallurgy ineni A. A. Baykov, Academy of Sciences USSR

"Magnetic Properties of Dysprosium Tellurides"

Moscow, Neorganicheskiye Materialy, Vol 6, No 8, Aug 70, pp 1528-1529

Abstract: There is interest in a study of the magnetic properties of the r.e.m. Chalcogenides of the yttrium subgroup, most elements in which have a complex magnetic structure. The authors therefore studied compounds of dysprosium with tellurium:  $DyTe$ ,  $Dy_3Te_4$ ,  $Dy_2Te_3$ ,  $Dy_4Te_7$ ,  $Dy_4Te_9$  and  $Dy_4Te_{11}$ . Measurement of the temperature dependence of magnetic susceptibility of dysprosium tellurides was performed using a pendulum balance in the 80-900°K temperature interval with a magnetic field intensity of about 10 koe. The investigations showed that the dependence of the inverse specific magnetic susceptibility on temperature is linear for all dysprosium tellurides. The results of the studies of the magnetic properties showed that these compounds have different electrical properties from metallic dysprosium and a significantly different nature of exchange interactions, indicating that the sf exchange interaction is significant in the formation of complex magnetic structures in the r.e.m.

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USSR

NOVIKOVA, S. I., et al., Fizika Tverdogo Tela, Vol 13, No 9, Sep 71, pp 2764-2766

increased and at 619°K as the temperature falls. In contrast to the previously studied specimen, the results of this work showed a negative coefficient throughout the entire temperature range, with a more gradual increase in absolute value near the transition point instead of an abrupt change from positive to negative values. Measurements of the variation with temperature of the relative change in volume showed that this parameter at the phase transition is extremely sensitive to specimen composition. In the first specimen (studied in the previous paper with 50.6 atomic percent tellurium) transition takes place with an increase in volume, while in the second specimen (50 atomic percent tellurium) the volume decreases at the transition point. This indicates that there should be a composition somewhere between these two specimens where there is no change in volume at the transition point. These results are used to explain some discrepancies in the literature. Two figures, bibliography of four titles.

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USSR

NOVIKOVA, S. I., SHELIKOVA, L. Ye., ABRIKOSOV, N. Kh., YEVSEYEV, E. A.,  
Institute of Metallurgy imeni A. A. Baykov, Moscow

"Investigation of the Phase Transition of Germanium Telluride"

Leningrad, Fizika Tverdogo Tela, Vol 13, No 9, Sep 71, pp 2764-2766

Abstract: The article is a continuation of previous work (Novikova et al., Fizika Tverdogo Tela, Vol 12, 1970, p 3623) in the investigation of germanium telluride in the region of the transition from the low-temperature rhombohedral lattice ( $\alpha$ -GeTe) to the face-centered cubic type ( $\beta$ -GeTe). The measurements were made on a high-temperature quartz dilatometer with a sensitivity to elongation of  $10^{-6}$  cm. Measurements in the phase transition region were made every  $0.1^{\circ}\text{C}$  with temperature variation of no more than  $0.03^{\circ}\text{C}$ . An irregularly shaped specimen was studied parallel and perpendicular to axis [111]. A single crystal grown from a 50:50 (atomic) melt of germanium and tellurium was used as the specimen. Curves for the variation with temperature of the linear coefficient of thermal expansion show that the phase transition takes place at  $626^{\circ}\text{K}$  when the temperature is

1/2

ABRIKOSOV, N. Kh.

Chemistry

PHASE DIAGRAMS OF SEMICONDUCTOR SYSTEMS  
(Symposium in Moscow)Larissa P. Dorofeeva, Abstracts of the 1965 Symposium on Semiconductor Chemistry, Vol. 1, No. 1, 1965, pp. 91-102.

The Fifth Symposium on Phase Diagrams of Semiconductor Systems, organized jointly with the Institute of the Problems of the Academy of Sciences, was held in the Institute of Metallurgy under A. A. Bogdanov. In the work of the Symposium were about 100 papers dealing with the phase diagrams of many of the semiconductor systems. The reports were presented, devoted to investigation of phase diagrams and questions in the study of the nature of crystal lattice defects and their influence on the properties of semiconductor compounds.

The Symposium demonstrated the growing interest of scientists in the physics and chemistry of non-equilibrium semiconductor compounds, as on the solution of these problems a great extent depends the creation of materials with controllable electronic properties necessary for the production of semiconductor instruments and for industrial electronics technology.

In the reports considerable attention was given to the complex question of determination of the phase diagrams of semiconductor compounds. The reports were devoted to the study of the phase diagrams of many semiconductor systems. The most studied semiconductor compounds were silicon, germanium, and gallium arsenide. The investigation of the phase diagrams of these compounds is of great interest, since they are the basis of the method of "frozen equilibrium", which permits to obtain semiconductor materials with a high degree of purity and to study the equilibrium at high temperatures and cooled at the same time to room temperature. However, the method of "frozen equilibrium"

Acc. Nr: **AP0044917** Abstracting Service:  
CHEMICAL ABST.

Ref. Code:  
**470 450000**

83878c Metal-dielectric transition in semimetals in extremely high magnetic fields. I. Abrikosov, A. A. (L. D. Landau Inst. Theor. Phys., Moscow, USSR). *J. Low Temp. Phys.* 1970, 2(1), 37-58 (Eng). An anal. is given of a model of a semimetal with isotropic electron and hole spectra, sep'd. in momentum space. The applied magnetic field is assumed to be strong enough to ensure that only one quantum level participates in each spectrum. The overlapping of levels is such that the Fermi energy is greater than the binding energy of the particle pairs. Weak point interaction is assumed to operate between the particles, which is valid for fields and dielec. consts. that are not too high. The sign of the interaction can be arbitrary. Since the anal. is concerned with spinless fermions (degeneracy removed by the field), the system exhibits interactions between electrons and holes, but there is no interaction between particles of the same kind. Cooper pairing of particles with the same charge is absent, but electron-hole excitons are formed; i.e., the transition to a dielec. takes place. The problem leads to "parquet" equations and is therefore solved only with logarithmic accuracy. A general method is developed for finding the "anomalous" avs. corresponding to pairing, and the binding energies from "asym." parquet vertexes. RCMV

REEL/FRAME

19771775

2/2 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133690

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR PART I SEE IBID VOL. 2, 37. THE SEMIMETAL MODEL IS DISCUSSED FOR THE CASE OF EXTREMELY HIGH MAGNETIC FIELDS, SUCH THAT  $\ln(p_{\text{SUBO}} - N)$  GREATER THAN 1, WHERE  $p_{\text{SUBO}}$  IS THE FERMI MOMENTUM AND  $N$  IS THE RECIPROCAL OF THE DEBYE RADIUS. IT IS SHOWN THAT A SYMMETRICAL VERTEX HAS ONLY ONE POLE IN THIS CASE. THIS POLE IS GOVERNED BY THE INTERACTION CONSTANT, WHICH INCLUDES THE COULOMB LOGARITHM,  $\ln(p_{\text{SUBO}} - N)$ . FACILITY: ACAD. SCI. USSR, MOSCOW.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--ON THE POSSIBILITY OF EXCITON FORMATION IN SEMIMETALS IN EXTREMELY  
HIGH MAGNETIC FIELDS. II -U-  
AUTHOR--ABRIKOSOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--J. LOW TEMP. PHYS. (GB), VOL. 2, NO. 2, P. 175-86 (MARCH 1970)

DATE PUBLISHED----MAR 70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--EXCITON, STRONG MAGNETIC FIELD, METAL ELECTRON CONDUCTIVITY,  
COULOMB INTERACTION, LOW TEMPERATURE PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3005/1785

STEP NO--US/0000/70/002/002/0175/0186

CIRC ACCESSION NO--AP0133690

UNCLASSIFIED

USSR

ABRIKOSOV, A. A., Landau Institute of Theoretical Physics of the USSR Academy of Sciences

"Phase Diagram of an Excitonic Dielectric in a Strong Magnetic Field"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Oct 73, pp 1508-1517

Abstract: It is shown that in the formation of an excitonic state in a semimetal in a strong magnetic field two phases should exist: a) a "reduced metal" in which part of the free carriers is eliminated at  $T = 0$  due to pairing, and b) an "excitonic insulator" in which free carriers are absent at  $T = 0$ . Inasmuch as the electron density in the reduced metal possesses a long-period superstructure along the magnetic field, the two phases differ not only at  $T = 0$  but at finite temperatures as well. The period becomes infinite at the transition to the excitonic insulator phase. The qualitative behavior of the curve  $T_c(E_g)$  for which  $\Delta \rightarrow 0$  and also of the curve  $T_{ci}(E_g)$  separating the two excitonic phases is determined.

The article includes 23 equations and three figures. There are six references.

1/1



USSR

ABRIKOSOV, A. A., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Oct 70, pp 1280-1298

The role of coulomb interaction is considered for both types of spectra. A slowly varying (logarithmic) factor appears in the spectrum in the case of a linear dispersion law. In the case of a quadratic spectrum the effective interaction for small momenta becomes strong and the concept of a one-particle spectrum is invalid. The behavior of the Green functions is governed by laws which are similar to those encountered in the theory of a field with a strong coupling and in the vicinity of a phase transition point of the second kind (scaling). These yield power laws for the electron specific heat and the electron momentum distribution.

2/2

- 101 -

USSR

ABRIKOSOV, A. A.; BENESLAVSKIY, S. D. (Landau Institute of Theoretical Physics)

"On the Possible Existence of Intermediate Substances between Metals and Dielectrics"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; October, 1970;  
pp 1280-98

ABSTRACT: The possibility of the existence of substances with electron spectra containing neither an energy gap nor a Fermi surface is investigated. First of all, the question of the possibility of contact at a single point of the conductivity band and the valence band is investigated within the framework of the one-electron model. It is shown that such a possibility exists under conditions of symmetry of a crystal. A complete investigation is carried out for points in the space of a reciprocal lattice with a small group equivalent to a point group. The case of a more complex small group is considered. It is shown that in the vicinity of the point of contact the spectrum may be linear as well as quadratic.

2/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135722

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPARATIVE GROWTH AND BIOSYNTHESIS OF LIPIDS BY YEAST (2 STRAINS OF LIPOMYCES AND ONE STRAIN OF CRYPTOCOCCUS) GROWING ON PEAT HYDROLYZATES AND SYNTHETIC MEDIUM CONTG. GLUCOSE WERE STUDIED. THE RATE OF YEAST LIPID BIOSYNTHESIS IN PEAT HYDROLYZATES IS APPROX. THE SAME AS IN GLUCOSE MEDIUM. REGARDLESS OF THE SUBSTRATE ON WHICH THEY WERE GROWN, THE YEAST LIPIDS CONTAIN PRIMARILY TRIGLYCERIDES (71.3-78.1PERCENT) AND PHOSPHOLIPIDS (4.2-5.5PERCENT). IN THE CASE OF PEAT HYDROLYZATE A CHANGE IN THE RATIO OF SOME LIPID FRACTIONS WAS OBSD. THIS CAN BE ATTRIBUTED TO THE SOURCE OF NUTRIENT C PRESENT IN THE HYDROLYZATE.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--COMPOSITION AND SOME PROPERTIES OF LIPIDS OF YEASTS GROWN IN TOP  
PEAT HYDROLYZATES -U-  
AUTHOR-(04)-ZALASHKO, M.V., ABRAZTSOVA, N.V., PIDOPLICHKO, G.A., GINZBURG,  
YA.I.  
COUNTRY OF INFO--USSR **A**

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. BIYAL. NAVUK 1970, (2),  
76-81  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--BIOSYNTHESIS, LIPID, YEAST, GLUCOSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/0226

STEP NO--UR/0440/70/000/002/0076/0081

CIRC ACCESSION NO--AP0135722  
UNCLASSIFIED

UDC: 681.3.06:51

USSR

ABRAZAS, R. Yu., ZHINTELIS, G. B., KHOMSKIS, R. R.

"Minimizing the Mean Time of Access to Magnetic Discs"

V sb. Avtomatika i vychisl. tekhn. (Automation and Computer Technology-- collection of works), No 3, Vil'nyus, "Mintis", 1971, pp 155-164 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V957)

Translation: Optimum placement is considered for the data blocks in an external magnetic-disc memory, which makes it possible to minimize the mean access time. Solution of this problem involves the following stages: 1) arranging the data blocks on similar tracks on the magnetic disc; 2) putting the similar tracks of the magnetic discs in order. The methods developed are easily realized by means of a digital computer, and in most practical instances can be realized manually. Authors' abstract.

USSR

UDC [621.362:538.4]:666.76:661.665.1.048.5

*A*  
ABRAYTIS, R.I., MAYAUSKAS, I.S., YANULIS, V.V., REKOV, A.I., and SEREBRENNIKOVA, V.Ie.

"Rate of Vaporization and Erosion of Silicon Carbide Based Ceramics"

Materialy dlya kanala MGD-generatora (Materials for a MHD-Generator Channel -- collection of works), Moscow, "Nauka", 1969, pp 34-36 (from RZh-Elektrotehnika i Energetika, Moscow, No 5, 1970, Abstract No 5A136)

Translation: The authors study the rate of vaporization up to 2000°K of ceramics based on silicon carbide and alloyed with refractory metals. Resistance of ceramics to erosion was also studied at 2000°K. It was shown that intense vaporization of ceramics begins at 1950°K in air and that such materials can function up to that temperature. The original article has one illustration and three bibliographic entries.

1/1

UDC: 681.3

USSR

ABRAYTIS, I. P., MATITSKAS, I.-K. L., KHOMSKIS, R. R.

"On the Problem of Arranging Elements of Different Overall Dimensions"

V sb. Avtomatika i vychisl. tekhn. (Automation and Computer Technology-- collection of works), No 3, Vil'nyus, "Mintis", 1971, pp 211-218 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V886)

Translation: Mathematical formulation of the problem of arranging elements of different overall dimensions with the aid of R-functions is considered. An algorithm is proposed for digital computer solution of this problem. The possibilities of solving this problem by sequences of heuristic methods are discussed. Authors' abstract.

USSR

UDC: 681.3

ABRAYTIS, L. B., SHEYNAUSKAS, R. I.

"Typical Characteristics of Functional Diagrams in Problems of Arrangement"

V sb. Avtomatika i vychisl. tekhn. (Automation and Computer Technology--collection of works), No 3, Vil'nyus, "Mintis", , 1971, pp 199-210 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V887)

Translation: An algorithm is presented for representing connective trees of individual connected sets in such a way as to minimize the connectedness of the diagram. Execution of the algorithm involves following the goal of increasing the number of parallel connections between two functional elements and reducing the number of elements connected directly to the element being studied. It is proved that the algorithm guarantees reaching the optimum solution. Authors' abstract.



2/2 015

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AR0118176  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. AS THE INITIAL MODEL FOR THE PROBLEM, THE AUTHORS ASSUME THAT THE MATRIX IS A SPHERE WITH CENTRALLY LOCATED DIAMOND INCLUSION. THE SYSTEM IS SUBJECTED TO A TEMPERATURE FIELD WHICH IS CONSTANT IN THE RADIAL DIRECTION. THE PROBLEM IS SOLVED FOR THE CASE OF A UNIFORM INCREASE IN TEMPERATURE (STEADY STATE) WHERE THERMOELASTIC INTERACTION RESULTS FROM THE DIFFERENCE BETWEEN THE MODULI OF ELASTICITY AND COEFFICIENTS OF THERMAL EXPANSION OF MATRIX AND INCLUSION. THE RESULTS OF CALCULATION OF TEMPERATURE STRESSES ARE GIVEN FOR A SPECIFIC EXAMPLE. THE POSSIBILITY OF DEVELOPMENT OF PLASTIC ZONES IN THE REGION OF CONTACT BETWEEN THE DIAMOND PARTICLE AND THE SURROUNDING MATRIX IS DISCUSSED.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--THERMOELASTIC INTERACTION OF DIAMONDS AND DIAMOND CONTAINING  
MATRICES -U-  
AUTHOR-(03)-ABDULZADE, A.M., ABRASOV, I.K., IBRAGIMOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--ZA TEKHN. PROGRESS (TOWARD TECHNICAL PROGRESS), 1969, NO 7, PP  
REFERENCE--RZH-MEKHANIKA, NO 2, FEB 70, ABSTRACT NO 2V1149  
DATE PUBLISHED----FEB 70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND  
MARINE ENGR

TOPIC TAGS--DIAMOND, THERMOELASTICITY, CUTTING TOOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1019

STEP NO--UR/0423/69/000/007/0024/0025

CIRC ACCESSION NO--AR0118176

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AT0114359

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TABLE IS PRESENTED OF THE CHANGES IN THE ENTROPY COMPONENTS OF THE FREE ENERGY CHANGE,  $T \Delta S_{SUB1}$ ,  $T \Delta S_{SUB11}$ ,  $T \Delta S_{SUB(LONG RANGE)}$ , AND  $T \Delta S_{SUB(SHORT RANGE)}$ , FOR HYDRATION OF THE IONS  $Li^+$ ,  $Na^+$ ,  $K^+$ ,  $Rb^+$ ,  $CS^+$ ,  $CA^{PRIME2POSITIVE}$ ,  $SI^{PRIME2POSITIVE}$ ,  $BA^{PRIME2POSITIVE}$ ,  $CD^{PRIME2POSITIVE}$ ,  $CL^-$ ,  $BR^-$ ,  $I^-$  AT 0, 25.15, 40, 60, 80, AND 100 DEGREES. THE BASIC INFLUENCE ON THE TEMP. DEPENDENCE OF THE ENTROPY OF HYDRATION IS THAT OF THE STRUCTURAL COMPONENT  $T \Delta S_{SUB11}$  AND PARTICULARLY THAT OF  $T \Delta S_{SUB(SHORT RANGE)}$ . STRUCTURAL CHANGES OF WATER WITH INCREASING TEMP. INHIBIT IONIC HYDRATION. FACILITY: IVANOV. KHIM.-TEKHNOL. INST., IVANOVO, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--CHANGES IN THE ENTROPY COMPONENT OF FREE ENERGY CHANGE DURING THE  
HYDRATION OF MONATOMIC IONS AT VARIOUS TEMPERATURES -U-  
AUTHOR-(02)-KRESTOV, G.A., ABRASIMOV, V.K. *A*  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(1), 41-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--HYDRATION, ENTROPY, WATER, THERMAL EFFECT, MOLECULAR STRUCTURE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1993/1919 STEP NO--UR/0153/70/013/001/0041/0043  
CIRC ACCESSION NO--AT0114359  
UNCLASSIFIED

USSR

UDC 518.517(944)947

ABRASHIN, V. N., Institute of Mathematics, BSSR Academy of Sciences

"Difference Schemes for Nonlinear Hyperbolic Equations. I"

Minsk, Differentsial'nyye Uravneniya, Vol 9, No 11, Nov 73, pp 2029-2040

Abstract: The author investigates the convergence of difference schemes of first and second orders of accuracy for quasilinear and nonlinear, hyperbolic first-order systems and also studies an economic difference scheme for a nonlinear, second-order hyperbolic equation. It is assumed that all nonlinear functions occurring in the difference schemes satisfy defined properties only in the neighborhood of exact solution of the initial problems. Errors of the proposed difference schemes are evaluated.

1/1

2/2 015

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114539

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT WAS FOUND THAT IN GUINEA PIGS TREATED WITH PENICILLIN, THE LATTER WAS ACCUMULATED AND RETAINED IN THE INTESTINE TISSUES. DEPENDING ON THE DOSE, THE ANTIBIOTIC WAS RETAINED IN THE TISSUES OF THE INTESTINE FOR 2 TO 4 DAYS OR EVEN MORE IN SOME CASES. PENICILLIN RETAINED IN THE INTESTINE TISSUES INHIBITED THE GRAMNEGATIVE MICROFLORA FOR PROLONG PERIODS OF TIME AND PROVIDED CONDITIONS FOR MULTIPLICATION OF E. COLI WHICH CAUSED HEMORRHAGIC ENTEROCOLITIS. NO SUCH DISTRIBUTION OF PENICILLIN WAS OBSERVED IN ALBINO MICE, RATS AND RABBITS. FACILITY: INSTITUTE FOR MICROBIOLOGY OF BULGARIAN ACADEMY OF SCIENCES, SOFIA.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--RETENTION TIME OF PENICILLIN IN INTESTINE OF GUINEA PIGS -U-  
AUTHOR-(03)-TUSHKOV, A., ABRASHEV, I., GEORGIEV, D.  
COUNTRY OF INFO--USSR  
SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 422-426  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PENICILLIN, GUINEA PIG, GASTROINTESTINAL SYSTEM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1994/0143 STEP NO--UR/0297/70/015/005/0422/0426  
CIRC ACCESSION NO--AP0114539  
UNCLASSIFIED

### Hydraulic and Pneumatic

USSR

ABUZOVA, F. F., ABRAMZON, L. S.

"Specifics of the Development of a Circular Stream Falling on a Flat Stream"

Tr. VNIi po Sboru, Podgotovke i Transp. Nefti i Nefteproduktov [Works of All-Union Scientific Research Institute on the Collection, Preparation and Transportation of Oil and Petroleum Products], No 8, 1971, pp 139-146, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 B810 by A. N. Sekundov).

Translation: Results are presented from an experimental study of a flow in a fan stream formed upon collision of a circular stream of diameter  $2r_0 = 5$  mm with a flat screen. The velocity fields are measured at  $r/r_0 = 40-80$ , flow velocities 57-80 m/sec, distance between nozzle and screen  $h/r_0 = 12-14$ .

It is noted that there is significant divergence between the experimental data produced at great distances from the point of collision of stream with screen and the known integral theorems, which do not consider losses to stream rotation upon collision with the screen and to friction with the surface of the screen. 5 Biblio. Refs.

1/1



Logic & Game Theory

USSR

UDC: 62-501.7:518.9

ABRAMYANTS, T. G., VOLKOVINSKIY, M. I., MASLOV, Ye. P., and  
RETROVSKIY, A. N., Moscow

"Tracking Game on a Plane With a Limited Number of Tracking  
Trajectory Corrections"

Moscow, Avtomatika i Telemekhanika, No 7, 1972, pp 31-39

Abstract: The purpose of this paper is to analyze a differential tracking game on a plane for a limited number of tracking trajectory corrections. The game is played by having two participants, a pursuer and an evader, moving as points on a plane. The pursuer uses piece-wise programmed control, with shifts from one control law to another at a particular moment, the number of such shifts being finite. The trajectory corrections are defined as the transitions from one program to the other. It is assumed that the players have simple types of motion, with the velocity of the pursuer exceeding that of the evader. Solutions for the game are sought on the basis of a combination of classical calculus of variations and dynamic programming.

3/3 015 UNCLASSIFIED PROCESSING DATE--11SEP70  
CIRC ACCESSION NO--AP0106808  
ABSTRACT/EXTRACT--THUS, THE ROLE OF MOL. O DURING HYDROLYSIS IS MORE  
IMPORTANT THAN THAT GENERALLY ASSUMED, AND SPECIAL MEASURES ARE NEEDED  
TO PREVENT OR AT LEAST REDUCE THE LOSSES. REPLACEMENT OF O BY CO SUB2  
INCREASES THE YIELD OF FURFURAL BY 12-15PERCENT. UNDER INDUSTRIAL  
CONDITIONS, REDN. OF OXIDN. NOT ONLY INCREASES THE FURFURAL YIELD, BUT  
ALSO IMPROVES THE QUALITY OF THE PRODUCTS FROM PLANT MATERIAL  
HYDROLYZATES.

UNCLASSIFIED

2/3 015

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106808

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUNFLOWER HUSKS WERE HYDROLYZED IN A PILOT PLANT APP. AND EVERY 10 MIN, SAMPLES OF THE HYDROLYZATE DISCHARGED WERE ANALYZED FOR THEIR CONTENTS OF PEROXIDES AND ACIDS, AS WELL AS OF FURFURAL. ORG. ACIDS WERE SEPD. BY COLUMN CHROMATOG. ON SILICA GEL, H SUB2 O SUB2 WAS DETD. BY CERIMETRY, PERACIDS BY IODOMETRY, AND SOME PEROXY COMPS. BY POLAROGRAPHY. THE MAX. FORMATION OF PEROXIDES WAS OBSD. DURING THE HEATING PERIOD; THEY WERE DISCHARGED DURING THE 1ST 10-15 MIN OF FURFURAL VAPOR EVOLUTION. AT THE END OF THE HEATING PERIOD, THERE WAS 5-9 MG PEROXIDE O-MOLE FURFURAL. THE CONC. OF H SUB2 O SUB2 AND PERACIDS WAS THE HIGHEST AT THE BEGINNING AND AT THE END OF THE COOK. PYROMUCIC, FUMARIC, ACETIC, BETA FORMYLACRYLIC, FORMIC, MALEIC, AND SUCCINIC ACIDS WERE FOUND. A COMPARISON OF THE DATA WITH THOSE OBTAINED IN LAB. AUTOXIDN. OF FURFURAL SHOWED THAT FURFURAL REACTS WITH O IN THE HYDROLYZER. EXCEPT FOR HOAC, WHICH ORIGINATES FROM HYDROLYSIS OF PLANT TISSUES, ALL ACIDS ARE THE PRODUCTS OF FURFURAL AUTOXIDN. BY A CHAIN REACTION IN THE PRESENCE OF ATM. O. THE PEROXIDES CANNOT SERVE AS AN INDEX OF OXIDIZABILITY BECAUSE OF THEIR LABILE NATURE. A MORE RELIABLE INDEX WOULD BE THE CONC. OF ACIDS, BUT HERE ALSO THEIR CONVERSION AT HIGH TEMP. MUST BE TAKEN INTO CONSIDERATION. THE MOST STABLE OF THE ACIDS IS HCO SUB2 H AND ITS YIELD CAN SERVE AS AN INDEX OF FURFURAL LOSSES BY OXIDN. IN THE HYDROLYZER. ACCORDING TO THIS INDEX, THE AMT. OF FURFURAL FORMED IN THE HYDROLYZER IS SIMILAR TO 130PERCENT IF THE ACTUAL YIELD IS TAKEN AS 100PERCENT. FURTHER LOSSES OCCUR THROUGH DEGRADATION OF PENTOSE WITHOUT FURFURAL FORMATION.

UNCLASSIFIED

1/3 015 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--COMPOSITION OF PEROXIDES AND ACIDS OF FURFURAL CONDENSATES -U-  
AUTHOR--KARDAYLOVA, K.M., ABRAMYANTS, S.V., KULNEVICH, V.G.  
COUNTRY OF INFO--USSR  
SOURCE--GIDROLIZ. LESOKHIM. PROM. 1970, 23(1) 8-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--FURFURAL, PEROXIDE, CARBOXYLIC ACID, FORMIC ACID, MALFIC ACID,  
SUCCINIC ACID, PROCESSED PLANT PRODUCT, POLAROGRAPHY, CHROMATOGRAPHY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1989/0145 STEP NO--UR/0328/70/023/001/0008/0009  
CIRC ACCESSION NO--AP0106808  
UNCLASSIFIED

Pulse Technique

UDC A678.02:66.097

USSR

ABRAMYAN, Ye. A., VOROB'YEV, V. V., YEGOROV, A. A., YELNIK, I. A.,  
and PONOMARENKO, A. G.

"Initiating the Discharge in a Megavolt Gas Space by an Electron  
Beam"

Moscow, Pribory i tekhnika eksperimenta, No. 1, January-February,  
1971, pp 117-118

Abstract: This paper describes the experimental method and results in the use of an electron beam to start the discharge in a gaseous gap. The high voltage of 0.2 to 1 MV is supplied by a Tesla induction transformer, with the capacitance formed by the transformer electrode and the transformer's grounded casing playing the part of the discharge gap. This casing is filled with gas at a pressure of 12 atmospheres, with the electron beam injected, with an energy of 150 to 400 keV and a current of 10 A in the course of 5 ns, into the center of the gap, which has a length of 4 cm. The injection is made through a 1-cm diameter window of fine foil. A sketch of this equipment is provided. Photographs of the discharge are reproduced.

1/1

USSR

ABRAMYAN, Ye. A. et al

"1.2 Mev High-Current Proton Accelerator"

Moscow, Atomnaya Energiya, November, 1970; pp 346-51

Abstract: Peculiarities in the parameters and design of an experimental transformer-type proton accelerator are described. An ion source with electromagnetic oscillation of electrons and an accelerating tube with electrostatic quadropole lenses were used for forming and directing the proton beam.

The main purpose of developing the accelerator was to verify the efficiency of the basic design concepts and the applicability of computing methods for producing high-current proton beams.

A 1.2-Mev proton beam with maximum and average currents of about 80 and 9 ma respectively were obtained (pulse duration 2-5  $\mu$  sec, pulse repetition rate 50 cps). There was satisfactory agreement between the calculated and experimental values of the main parameters of the accelerator.

The results of this work may be used for the design of high-current proton injectors and industrial devices.

The article included 7 equations, 5 figures, and one table. There are 13 references.

1/1

2/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119365

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COPOLYMNS. OF MALEAMIC ACID WITH CH SUB2:CHCO SUB2 ET (I), OR STYRENE IN 50PERCENT ISO-PROH SOLN., OR MALEIC ANHYDRIDE (II) WITH I OR H SUB2 C: CHCO SUB2 ME (III) IN 50PERCENT MECH SOLN., CONTG. TERT-DODECYL MERCAPTAN AS THE CHAIN GROWTH REGULATOR AND CYCLOHEXANONE PEROXIDE AS THE INITIATOR, GAVE OLIGOMERS WHICH, WITHOUT ISOLATION, WERE TREATED WITH HCHO (MALEAMIC ACID COPOLYMERS) AND NH SUB3 OR H SUB2 NCH SUB2 CH SUB2 OH, RESP., FOR THE LATTER 2 COPOLYMERS. THE OBTAINED CROSSLINKED POLYMERS WERE SOL. IN WATER AT PH 8.5 AND GAVE FILMS UPON EVAPN. OF THE WATER AND HEATING THE RESIDUES AT 160DEGREES FOR 0.5 HR. THE BEST FILMS WERE OBTAINED FROM 8-II AND II-III COPOLYMERS; THEY CONTAINED LESS THAN OR EQUAL TO 95PERCENT 3,DIMENSIONAL STRUCTUR, HAD 40-45 KG-CM IMPACT STRENGTH, GOOD ADHESION TO METAL OR GLASS, AND RESISTED SALT SOLNS.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--WATER DILUTED THERMOSETTING COPOLYMERS -U-  
AUTHOR-(02)-ABRAMYAN, R.K., FILIPPYCHEV, G.F.  
COUNTRY OF INFO--USSR  
SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (1), 12-14  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS, CHEMISTRY  
  
TOPIC TAGS--THERMOSETTING MATERIAL, OLIGOMER, FORMALDEHYDE, AMMONIA,  
AMINE, PLASTIC FILM, IMPACT STRENGTH, AD ESION, MALEIC ACID, COPOLYMER  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/0429 STEP NO--UR/0303/70/000/001/0012/0014  
CIRC ACCESSION NO--AP0119365  
UNCLASSIFIED



USSR

UDC 533.916

OGANESYAN, R. S., ~~ABRAMYAN, M. G.~~

"On the Equilibrium and Frequency Spectrum of Pulsations of an Electron Cloud of Plane Symmetry"

Uch. zap. Yerevan. un-t. Yestestv. n. (Scientific Notes of Yerevan University. Natural Sciences), 1972, No. 1(119), pp 19-25 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G179)

Translation: The problem of the equilibrium state and oscillations of an electron shell over a uniformly, positively charged plane is solved. An expression is obtained for the frequency spectra which represent the combination of Bessel functions. V. A. Abramov.

2/2 008

UNCLASSIFIED

PROCESSING DATE--14NOV70

CIRC ACCESSION NO--AT0124123

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF BACKGROUND ON THE ELECTRON DIFFRACTION PICTURES OF METAL SAMPLES IS DISCUSSED THEORETICALLY WITH SPECIAL REF. TO THE QUESTION OF THE DISPLACEMENT OF THE DIFFRACTION PEAKS; THE RESULTS ARE COMPARED WITH EXPERIMENTAL DATA RELATING TO THIN FILMS OF CU. THE DISPLACEMENT OF THE LINES IN THE DIRECTION OF SMALLER SCATTERING ANGLES VARIES DIRECTLY AS THE SQUARE OF THE LINE WIDTH AND INVERSELY PROPORTIONAL TO ITS DEGREE OF CONTRAST (SIGNAL-NOISE).

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--DISPLACEMENT OF THE DIFFRACTION LINE MAXIMA IN ELECTRON DIFFRACTION  
PATTERNS ON ACCOUNT OF BACKGROUND -U-  
AUTHOR-(02)-PILYANKEVICH, O.M., ABRAMYAN, G.K. *A*  
COUNTRY OF INFO--USSR  
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DATE PUBLISHED-----70  
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**U R 0441**

**ABRAMYAN G.K.**

A70-23392 # On accuracy of electronogram measuring by means of comparator (Pro tochnist' vimiriuvannia elektronogram za depomogoiu komparatora). O. M. Piliankevich and G. K. Abramian (Akademiia Nauk Ukrain'skoi RSR, Institut Problem Materialoznavstva, Kiev, Ukrainian SSR). *Akademiia Nauk Ukrain'skoi RSR, Dopovidi, Seriia A-Fiziko-Tekhnichni i Matematichni Nauki*, vol. 32, Jan. 1970, p. 72-75. In Ukrainian.

The factors are analyzed affecting the accuracy of measuring the electronograms of polycrystalline samples by means of comparator. The analysis was carried out by means of the mathematical statistic methods. It is shown that the dispersion, characterizing an accuracy of measuring is directly proportional to the width of the measured diffraction line and inversely proportional to its contrast. (Author)

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19780255

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PRIMARY SOURCE: **Urologiya i Nefrologiya**, 1970, Nr **1**,  
pp **40-45**

**SOME PROBLEMS OF SURGERY OF THE ADRENAL GLANDS**

**A. Ya. Abramyan, A. P. Kalinin**

**Summary**

Over 50 operations were accomplished by the authors the last two and a half years on the adrenal glands for tumours of their cortical and medullary layers, in Itsenko-Cushing disease, primary aldosteronism, endarteritis obliterans and generalized carcinoma of the mammary gland. The significance of angiographic examinations, and of determination of central and peripheral venous pressure in surgery of the adrenal glands is discussed. Problems connected with replacement therapy at the immediate postoperative days and at the remote periods after adrenalectomy, with labour and various surgical interventions are given particular attention.

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REEL/FRAME

**19790762**

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USSR

UDC 621.365.82

POGOSYan, K. P., and ABRAMYan, A. S.

"Selection of Axial Types of Oscillation in a  $\text{CO}_2$  -  $\text{N}_2$ -He Laser with a 3-Mirror Resonator"

Yerevani amalsaran. Gitikan tegekagir. Bnakan gitutyunner, Western Section, Yerevan University. Natural Sciences. No 3, 1972, pp 143 - 147 Abstract in Armenian), RZh-Fizika, No 9, Sep 73, Abstract No. 9D753

Translation: A 3-mirror resonator system is considered, made up of two connected resonators of greatly differing lengths:  $L = 1400\text{mm}$ ,  $\ell = 0.5\text{mm}$ . It was assumed that the small resonator would work as a selectively reflecting mirror. The selection of axial types of oscillation was obtained experimentally. A single-frequency mode of oscillation was established with the possibility of operating at any of the most intensive lines of luminescence of the  $\text{CO}_2$  molecule. The method makes it possible to achieve rapid tuning from one radiation frequency to another, with the maximum speed of retuning depending on the properties of the piezo-ceramics used. Author's abstract.

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USSR

UDC 621.791.4:539.378.3.015:669.27

ABRAMTSEV, A. V. (Engineer), KEDRIN, I. D., and NICHUSHKIN, V. V.  
(Candidates of Techn. Sciences)

"Effect of Surface Preparation on the Formation of Permanent Joints  
From VNZ Alloy by Diffusion Welding Under Vacuum"

Moscow, Svarochnoye proizvodstvo, No 5, May 72, pp 23-24

**Abstract:** Diffusion welding in vacuum seems to hold great promise for producing permanent welds from refractory metals and alloys. This study concerns the effect of a vacuum spray-coated interlayer (on the surface to be welded) on the strength of joints from VNZ alloys produced by diffusion welding in vacuum. The chemical composition of VNZ alloy was (in %): 4.0-5.2 Mo; 0.8-2.0 Zr; 0.08-0.16 C; 0.03 O<sub>2</sub>;  $\leq$  0.04 H<sub>2</sub>;  $>$  0.005 N<sub>2</sub>; the balance--Nb. Nickel was used for the spray-coated interlayer. It is shown that the upper temperature limit for the joint is confined to the recrystallization temperature of niobium and its alloys. The presence of recrystallized grains does not reduce the weld strength but appears to depend on the number of gripping centers which increase with surface purity. The positive effect of the spray-coated film lies primarily in cleaning the surface rather than promoting diffusion processes. (6 illustrations, 7 bibliographic references)

1/1

Instruments and Measurements

UDC: 621.317.743

USSR

PAYANSKIY, Yu. M., ABRAMSON, Yu. M., SENCHILO, A. Ya.

"Measurements of Radio Interference When Selecting Sites for Locating Ground-Based Stations"

Tr. NII radio (Works of the Scientific Research Institute of Radio), 1972, No 1, pp 49-54 (from RZh-Radiotekhnika, No 8, Aug 72, Abstract No 8A346)

Translation: A radio interference measurement procedure is described and ways to improve the procedure are pointed out. The characteristics of the measurement equipment are given, and the suitability of the equipment for measuring interference in ground-based stations is estimated. Factors which influence the duration of measurements are enumerated, and it is shown how the measurement time can be shortened. Resumé.



USSR

UDC 619:616.986.7:636.8(470.44)

MALAFEYEVA, L. S., RUMYANTSEVA, Ye. V., and ABRAMSON, L. A., Saratov Medical Institute and Saratovskaya Oblast Sanitary Epidemiological Station

"Infection of Cats With Leptospira in the Town of Saratov"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971, p 147

Abstract: Eleven of 118 cats caught in the central area of Saratov and investigated for 13 types of Leptospirae by the agglutination-lysis reaction yielded positive results. Antibodies to *L. icterohaemorrhagiae* were found in seven cats, *L. pomona* in four, *L. tarassowi* in one, *L. grippotyphosa* in one, and *L. australis* in one. One of these had antibodies to two serotypes and another one to three serotypes. The titers ranged from 1:100 to 1:160. Although no quantitative evaluation of the epidemiological significance of this relatively high frequency of leptospirosis among cats can be made, it is believed that diseased household pets may well be the cause of sporadic leptospirosis in man. While 28 cases were recorded in Saratov in 1958-1965, other cases might have occurred without being properly diagnosed. It is therefore recommended tests for Leptospirae be performed routinely in patients with fever.

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USSR

ABRAMOVICH-POLYAKOV, D. K. and PILIPENKO, N. I., Vrachebnoye Delo, No 1, 1973,  
pp 129-133

and redistribution of  $^{32}\text{P}$  introduced enterally deviated from that in healthy individuals and was due to vascular disturbances and disturbances in phosphorus metabolism in patients with vibration sickness. It was impossible to establish any relationship between accumulation and redistribution of  $^{32}\text{P}$  and extent of vibration sickness.

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- 79 -

UDC 616-001.34

USSR

ABRAMOVICH-POLYAKOV, D. K., and PILIPENKO, N. I., Khar'kov Medical Institute,  
Khar'kov Scientific Research Institute of Labor Hygiene and Occupational  
Diseases

"Microcirculatory and Sorptional Changes in Patients With Vibration Sickness"

Kiev, Vrachebnoye Delo, No 1, 1973, pp 129-133

Abstract: Thirty six individuals working with vibrational equipment in casting shops (metallurgical plant) were studied. All of them had vibration sickness of the first and second stages. Each individual was injected with 0.2 ml. of  $\text{Na}_2\text{H}^{32}\text{PO}_4$  and the sorption of  $^{32}\text{P}$  at symmetrical points of upper extremities was studied. The obtained data in 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, and 25 minutes was compared with controls (20 healthy individuals injected with  $^{32}\text{P}$ ). The average rate of resorption of  $^{32}\text{P}$  among patients with vibration sickness was much higher compared with controls. Sorption of  $^{32}\text{P}$  on both sides of the human body was almost identical, but was slightly accelerated among individuals with the second stage of the disease. The resorption of  $^{32}\text{P}$  in sick individuals can be attributed to several causes. Among them are phosphorus deficiency in tissues of the upper extremities, hyperfunction of the lymphatic vessels in arms, predominance of the parasympathetic nervous system tone. Accumulation

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USSR

ABRAMOVICH-POLYAKOV, D. K., Gigiyena Truda i Professional'nyye Zabolevaniya,  
No 7, 1973, pp 12-15

regional reduction of intensity produced by vibration. Regional reduction of oxidation intensity is thought to have an important part in the development of disorders in nerve trophicity and in some aspects of metabolism.

USSR

UDC 617-001.34-07:616-008.922.1-074

ABRAMOVICH-POLYAKOV, D. K., Institute of Labor Hygiene and Occupational Diseases, Khar'kov

"General and Regional Changes in Oxidation Process Intensity Among Patients With Vibration Disease"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1973, pp 12-15

**Abstract:** The importance of changes in general and regional oxidation processes was assessed through a study of 92 foundry workers suffering stages I and II vibration disease. General oxidation intensity was judged by basal metabolism and the urine acidification factor, while regional intensity was assessed through the rate of oxyhemoglobin reduction in fingers upon cessation of circulation, through arterial-venous pressure differences, and through the oxygen utilization coefficient. Regional indexes generally showed a reduced oxidation intensity (heightened blood O<sub>2</sub> level, reduced arterial-venous pressure difference, reduced O<sub>2</sub> utilization factor). In opposition, general indexes showed heightened oxidation intensity (lowered acidification factor, generally a moderately heightened basal metabolism). It was found that regional changes preceded general changes. The suggestion is made that general oxidation intensity increases to compensate for

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2/2 007

UNCLASSIFIED

PROCESSING DATE--27 NOV 70

CIRC ACCESSION NO--AA0135227

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 2-ISOPROPYLNAPHTHALENE IS PREP'D.  
BY ALKYLATING NAPHTHALENE WITH A FRACTION OF POLYALKYLBENZENES (1:1-10  
RATIO) IN THE PRESENCE OF ALCL SUB3.

UNCLASSIFIED

1/2 007

UNCLASSIFIED

PROCESSING DATE--2005/10/10

TITLE--2, ISOPROPYLNAPHTHALENE -U-

AUTHOR--(05)-TOKARSKAYA, I.I., BIKCHURINA, L.KH., SHMELEV, A.S., ~~ABRAMOVICH, Z.I.~~  
S.Z., ABRAMOVICH, Z.I.  
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,583  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1977  
DATE PUBLISHED--10FEB70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NAPHTHALENE, ALKYLATION, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
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2/2 005

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0055165

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LET  $X$  BE KN SPACE, KN SPACE  $Y$  IS CALLED NORMED EXTENSION OF  $X$ , IF  $X$  IS A DENSE IDEAL IN  $Y$  AND  $X$  MAGNITUDE OF SUBX EQUALS  $X$  MAGNITUDE OF SUBY FOR ANY  $X$  EPSILON  $X$ . IN THE PAPER THE MAXIMAL NORMED EXTENSION IS BUILD AND SOME RESULTS ABOUT IT ARE PROVED.

UNCLASSIFIED



1/2 005 UNCLASSIFIED PROCESSING DATE--090CT70  
TITLE--MAXIMAL NORMED EXTENSION OF THE SEMI REGULATED NORMED SPACE -U-

AUTHOR--ABRAMOVICH, YU.A.

COUNTRY OF INFO--USSR *A*

SOURCE--VESTNIK LENINGRADSKOGO UNIVERSITETA, NO 1, MATEMATIKA, MEKHANIKA,  
ASTRONOMIYA, 1970, NR 1, PP 7-17  
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SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--MATHEMATIC SPACE, TOPOLOGY

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DOCUMENT CLASS--UNCLASSIFIED  
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STEP NO--UK/0043/70/000/000/0007/0017

CIRC ACCESSION NO--AP0055165  
UNCLASSIFIED

USSR

ABRAMOVICH, V. U., et al., Ukrainskiy Fizicheskii Zhurnal, vol 17, No 2, 1972, pp 329-332

of a strong external magnetic field directed parallel to the beam velocity vector is considered, and the question of the excitation of a three-dimensional spectrum of oscillations is analyzed. The authors are connected with the Physico-technical Institute, Ukrainian SSR Academy of Sciences, at Kharkov.

USSR

UDC: 533.9

ABRAMOVICH, V. U. and SHEVCHENKO, V. I.

"Nonlinear Theory of Dissipative Instability of a Relativistic Beam in a Plasma"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, vol 17, No 2, 1972, pp 329-332.

Abstract: There is a great deal of interest in investigating the interaction of a relativistic beam of charged particles with a dense plasma, particularly with regard to the study of the dissipative instability of the beam when the plasma is the result of the situation  $\nu > \delta$ , where  $\nu$  is the collision frequency and  $\delta$  the beam instability increment. This paper investigates the quasilinear approximation to the beam relaxation in the development of the instability, for the case of  $\omega_p \gg \nu \gg \delta$ , where the frequency  $\omega_p$  is a function of the plasma density. It is assumed that in the region of the wave numbers  $\Delta k_z$  many harmonics are lost. Equations of the quasilinear approximation are therefore used to investigate the nonlinear stage of the instability development. The unidimensional case corresponding to the presence

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